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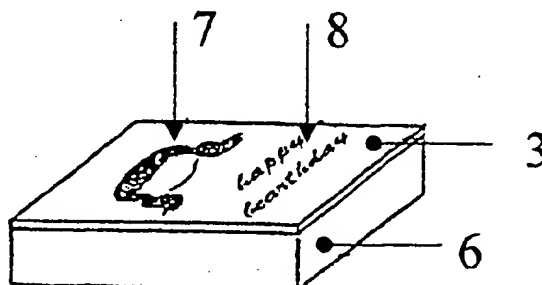
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(54) Title: COMPUTER ASSISTED PRINTER FOR DECORATION OF FOOD PRODUCT WITH EDIBLE INK

(57) Abstract

A system for computer science management of the decoration of sheet (3) of edible material food products including an economical printer prepared for food use and equipped with cartridge (5) made with material for food applications and loaded with food, non toxic and ecological inks.



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## COMPUTER ASSISTED PRINTER FOR DECORATION OF FOOD PRODUCT WITH EDIBLE INK

### TECHNICAL FIELD

The invention refers to the technological field of the computer science systems for printing, and in particular, to the food products decorating systems.

### STATE OF THE PRIOR ART

In the previous patent literature is included the document USA 4 910 661, in which it is described an computer science system for decorating confectionary products.

The equipment described therein results dimensionally very large and its management requires very expert operators.

The problem to solve is to realize an economic system including an extremely simplified electronic programme, and specifically dedicated to the management of the food products decorating operations.

### DESCRIPTION

The system object of this invention is here described with reference to schematic figures of the drawings attached as a non-limiting example.

Figure 1 schematically indicates a very common computer science equipment.

Picture 2 indicates a birthday cake topped with a sheet of edible material decorated with fantasy images and with printed text made of food inks, non toxic and ecological. The food printing operation is handled by an electronic programme preinstalled in the computer.

Figure 3 indicates the components that are in contacts with the printing sheets

In the figures each single item is marked as follows:

1 indicates a personal computer

2 symbolically indicates an electronic programme, simplyfied and specifically dedicated to the managing of the decorating operations with the use of food inks, non toxic and ecological.

3 is a sheet of edible material.

4 is an economic printer specifically prepared for food only operations, i.e. in which all of the components that are in contact with the printing sheet are made in materials suitable for food applications.

5 symbolically indicates some cartridges made of materials suitable for food applications loaded with food inks, non toxic and ecological.

6 is a birthday cake.

7 indicates a fantasy image in the decoration of the cake.

8 indicates the printed text fonts in the decoration of the cake.

9 indicates the alignements rollers.

10 indicates the feed roller .

11 indicates the supporting spoiler

The system functioning is very simple and versatile.

The speed and simplicity of the system's optimization make its use easy also to non-specialized operators.

The fantasy pictures and the printed text fonts are managed and personalized by an electronic programme specifically prepared for the food products decoration.

It is evident that the system can be operated with different structural, dimensional and computer science programme modifications without going out of the protection sphere of the present invention.

The present printing system with food, non toxic and ecological inks, finds useful application also in the production of printed material intrinsically having reduced environmental impact and solving the specific problematics of the printed paper rubbish.

It is also evident that by printing on common paper with non toxic inks the danger that the manipulation of the printed material represents for people is also eliminated.

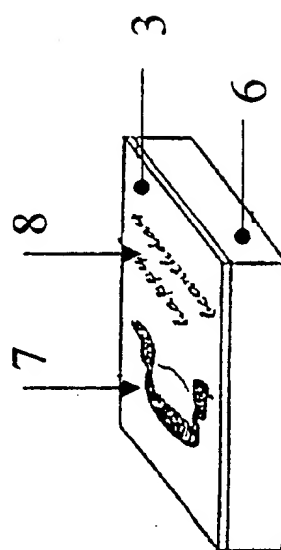
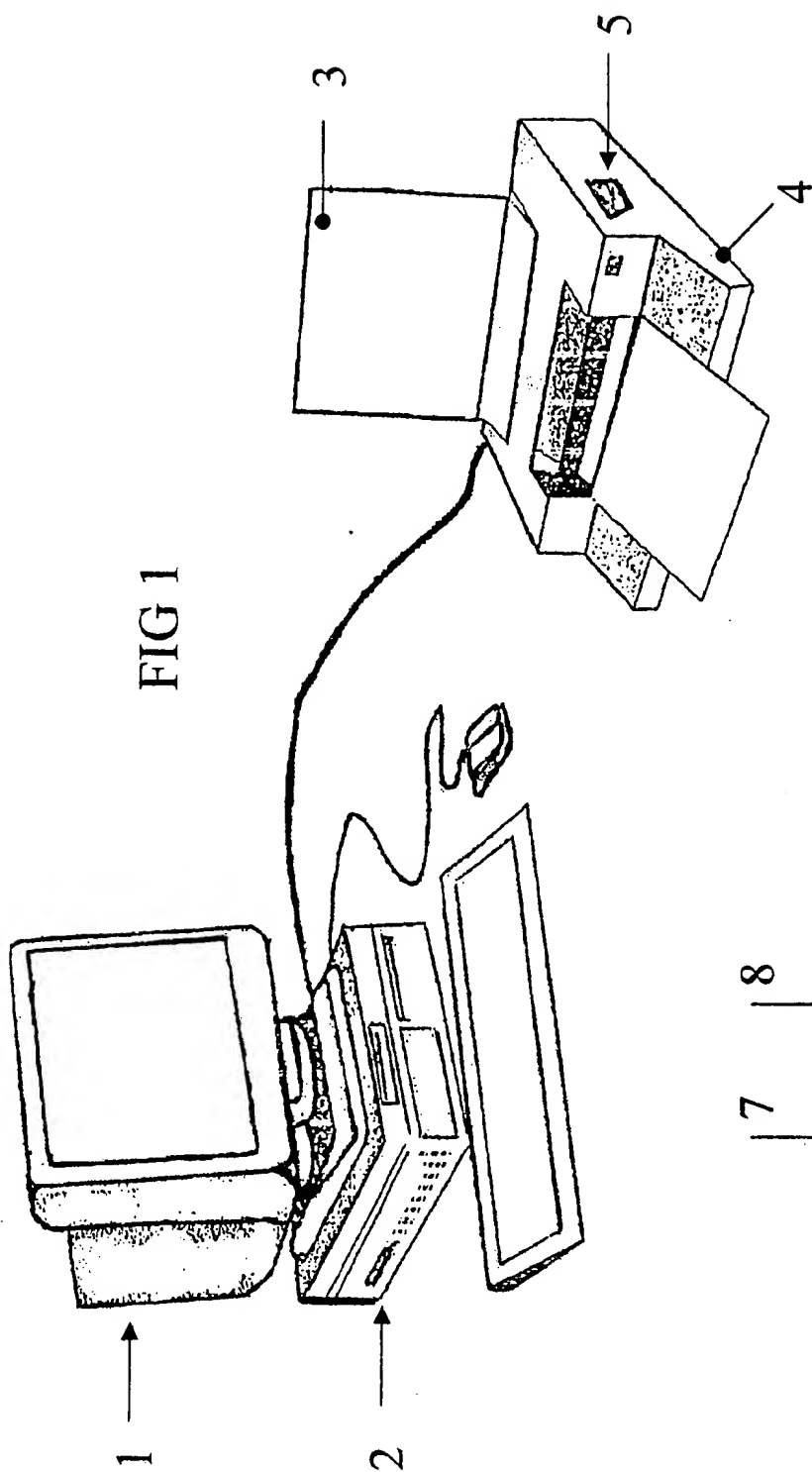
It is in fact frequent the case when, particularly in the childhood ambients, an accidental ingestion of printed paper happens.

Now that the original characteristics of the present industrial invention have been revealed, any person skilled in the same technical field, will be able without any inventive effort but with simple logical deductions and specific technical applications known in the art, to realize a system for the computer science management of the decoration of food products reproducing the functionality of the present invention as substantially described, illustrated and thereafter claimed.

## CLAIMS

- 1) System for the computer science management of the decoration of food products, CHARACTERIZED BY THE FACT of including an economical printer, prepared for food use and equipped with cartridges made with materials for food applications and loaded with food, non toxic and ecological inks.
- 2) System according to claim 1), CHARACTERIZED BY THE FACT that the management of the printing operations is governed by an electronic programme dedicated to the decoration of food products.
- 3) System according to claims 1) and 2), CHARACTERIZED BY THE FACT that the electronic programme dedicated to the printing operations for food applications is extremely simplified to allow an easy and versatile executive managing also to non-specialized operators.
- 4) System according to any preceding claims CHARACTERIZED BY THE FACT that the printer is suitable to the use of: common paper, paper for food applications, packing paper and edible materials.
- 5) System according to any preceding claims CHARACTERIZED BY THE FACT that the use of ecological inks reduces the environmental impact caused by the piling up of rubbish of printed paper.
- 6) System according to any preceding claims CHARACTERIZED BY THE FACT that the use of non toxic inks eliminates the danger that the manipulation of the printed materials represent for people.

- 7) System according to any preceding claims CHARACTERIZED BY THE FACT that all the components (9,10,11) that are in contact with the printing sheets (3) are realized with material suitable for food applications, ecological and atoxic.
- 8) System according to any preceding claims CHARACTERIZED BY THE FACT that the cartridge (5) and his refill containing inks for food application, ecological and atoxic, can be disposed as a product which is not prejudicial to the health of the community.





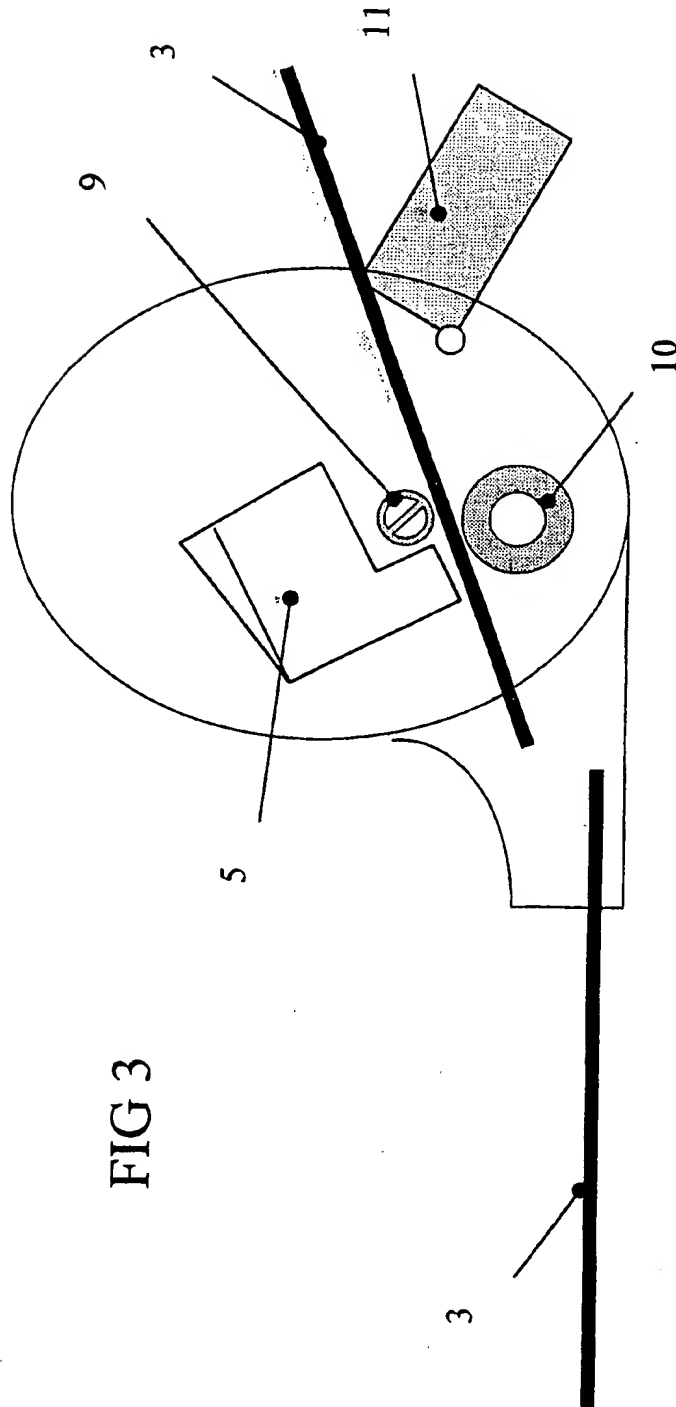


FIG 3

# INTERNATIONAL SEARCH REPORT

Interr. .nal Application No

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A23G3/28 A23G3/00 A23G3/20 A23G3/22 A23P1/08  
B41J2/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A23G A23P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 751 451 A (BERNET PATRICK) 23 January 1998 (1998-01-23) page 3, line 1 - line 29; claims 1-4,6 ---	1-8
X	WO 97 27759 A (CADEX LIMITED ;YOUNG ROBERT J (GB)) 7 August 1997 (1997-08-07) page 4, line 11 - line 18; figures 1,3 ---	1-8
X	EP 0 321 188 A (BARTH EDGAR L) 21 June 1989 (1989-06-21) cited in the application column 6, line 29 -column 8, line 9; figures 2,3,5,6 ---	1,2
A	DE 42 29 897 A (GROBBEL MICHAEL DIPL DESIGNER ;COHAUSZ HELGE B (DE)) 24 March 1994 (1994-03-24) --- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 013, no. 183 (M-820), 28 April 1989 (1989-04-28) & JP 01 014034 A (OPUTORONIKUSU KOGYO KK), 18 January 1989 (1989-01-18) abstract ---	1-8
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 05, 30 May 1997 (1997-05-30) & JP 09 000171 A (MORIZAKI TAKAMITSU), 7 January 1997 (1997-01-07) abstract ---	
A	WO 98 35568 A (ELIYAHU TALLY ;GRAFIX LTD U (IL); BEN MATITYAHU RUTH (IL)) 20 August 1998 (1998-08-20) -----	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 00/00342

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2751451 A	23-01-1998	NONE	
WO 9727759 A	07-08-1997	AU 4546296 A EP 0876107 A NZ 300660 A US 6058843 A	22-08-1997 11-11-1998 28-10-1998 09-05-2000
EP 0321188 A	21-06-1989	US 4910661 A JP 1281037 A	20-03-1990 13-11-1989
DE 4229897 A	24-03-1994	NONE	
JP 01014034 A	18-01-1989	NONE	
JP 09000171 A	07-01-1997	NONE	
WO 9835568 A	20-08-1998	AU 6005498 A	08-09-1998